



PUBLIC WORKS DEPARTMENT

CITY OF PORTSMOUTH

680 Peverly Hill Road

Portsmouth N.H. 03801

(603) 427-1530 FAX (603) 427-1539

October 30, 2014

Mark Pollins
Director of Water Enforcement
U.S. Environmental Protection Agency
Room # 3142
USEPA Ariel Rios Building (AR)
1200 Pennsylvania Avenue N.W.
Washington, D.C. 20004

Re: Consent Decree 09-cv-283-PB
Quarterly Report No. 20
Portsmouth, New Hampshire

Dear Mr. Pollins:

In accordance with Consent Decree 09-cv-283-PB, Section V, item paragraph 20, dated August 12, 2009, and as amended by Consent Decree Modification filed July 2, 2012 and approved by the Court February 15, 2013, the City of Portsmouth is submitting this quarterly status report.

The modified Consent Decree requires the filing of quarterly reports as follows:

Within 30 days after the end of each calendar quarter (i.e., by April 30, July 30, October 30, and January 30) after the Effective Date of this Consent Decree, until termination of this Decree pursuant to Section XVI, the City shall submit a written report for the preceding calendar quarter that shall include a description of the following: i) the status of any construction or compliance measures, including whether any such construction or compliance measure could be completed prior to relevant milestones contained herein consistent with sound engineering practice and normal construction practices; ii) the status of all Consent Decree milestones, including whether any have been achieved prior to the date for doing so; iii) any problems encountered or anticipated, together with the proposed or implemented solutions; iv) the status of permit applications; v) operation and maintenance operations; and vi) reports to State agencies.

The following is the list of compliance requirements listed in Section IV of the Consent Decree including additional requirements listed in the Consent Decree Modification. For clarity the requirements are listed in plain text and the status of the item is shown in ***Bold Italics***.

Preface

By letter dated June 27, 2013, the City formally notified EPA and NHDES that it was initiating the "Dispute Resolution" process set forth in the current Consent Decree paragraphs 41 et seq. relating to the City's request for an 18 month extension of the compliance schedule. This extension is necessary

HIGHWAY • WATER • SEWER • ENGINEERING • PARKING & TRANSPORTATION

because the scope of the project increased dramatically from the basis of the original Consent Decree schedule, a 4.3 million gallon per day (MGD) secondary treatment facility, to the current project, a 6.1 MGD total nitrogen of 8 mg/L treatment facility (season rolling average basis). The size of the treatment facility has increased based on discussions with the regulators, the loads to be treated were determined to be higher as discovered during piloting, and the treatment level has changed from secondary to seasonal rolling average total nitrogen. Since the June letter, the City provided written support for its extension request in August 2013 and met with EPA and DES representatives in September and November 2013 as part of the informal dispute resolution process. The City has reached a tentative agreement with EPA and DES relative to the extension of the schedule and next steps and is in the process of documenting such.

Recently the City has moved forward with an evaluation of regional wastewater treatment options at the City's Pease Wastewater Treatment Facility location. The evaluation will be performed concurrently with the design of the upgrade to the Peirce Island Wastewater Treatment Facility. The work will be performed by the consultant that performed the value engineering of the Peirce Island Wastewater Treatment Facility design. The Pease wastewater options evaluation will be completed in a phased manner and the impact on the Peirce Island design schedule as a result of this study is unclear. At this time, the City does not anticipate any need for an extension of the proposed November 2018 compliance milestone that is still under discussion, but may request flexibility for intermediate milestones that may be impacted.

Specific Consent Decree Items

8. Nine Minimum Controls Compliance Plan. Attached (*in the referenced CD*) as Appendix A is the Nine Minimum Controls Compliance Plan. The City shall implement the Nine Minimum Controls Compliance Plan in accordance with the schedule specified in Appendix A.

- i) *There are no construction related activities with this item. The compliance measures associated with this item are on-going.*
- ii) *There is no Consent Decree milestone associated with this item.*
- iii) *There have been no problems encountered or anticipated with this item.*
- iv) *There are no permit applications associated with this item.*
- v) *Operation and maintenance is on-going*
- vi) *There are no reports to State Agencies associated with this item.*

9. Wastewater Master Plan. Attached as Appendix B is the WMP SOW dated May 17, 2007. The City shall implement the WMP in Appendix B, and comply with all milestones and schedules in Appendix B.1.

The Schedule listed in Appendix B.1 has been modified by the Consent Decree Modification to include additional tasks and a revised schedule. The Consent Decree Modification includes a schedule for completion of secondary treatment upgrades at the Peirce Island Treatment Plant as well as adjustments to the Long Term Control Plan project schedule. Final completion for the wastewater treatment plant upgrades, including compliance with permit requirements, is required by May 2017. The City has requested an 18 month extension of this date and that request is currently being discussed between the City and EPA in the context of the informal dispute resolution process described in the Consent Decree. The additional requirements of the amended Consent Decree are listed below as items g through n:

g. By June 30, 2012, the City shall complete pilot testing of potential treatment technologies for achieving secondary treatment, including, but not necessarily limited to: Biologically Aerated Filters (BAF), BioMag, Moving Bed Biofilm Reactors (MBBR) w/ Dissolved Air Flotation (DAF), and Conventional Activated Sludge with BioMag. By July 30, 2012, the City shall complete a data summary relative to the pilot testing.

This milestone has been met. No further action required.

h. By October 1, 2012, the City shall submit a Piloting Technical Memorandum that includes data from piloting and a recommendation on the design and capacity of secondary treatment facilities.

This milestone has been met. The final engineering report was submitted September 28, 2012 to State Agencies concurrent with submission to the EPA as part of the milestone deadlines. The results of this work were presented to representatives of EPA and NHDES on December 18, 2012. Formal comments were received from the EPA by letter dated January 30, 2013. Additional comments were exchanged between the City and EPA by letters dated March 1, 2013 (City to EPA), March 6, 2013 (EPA to City) and March 15, 2013 (City to EPA). The City met with representatives of EPA and NHDES on April 1, 2013 to discuss correspondence. The City is proceeding to design and construct a 6.13 MGD treatment facility capable of treating to a total nitrogen of 8 mg/L on a season rolling average basis. No further action is required of the City.

i. By July 1, 2013, the City shall commence final design of secondary treatment facilities.

This milestone has been met. The City received Statement of Qualifications for Design Engineering Services on January 17, 2013 and executed a design phase engineering contract with the selected consultant, AECOM, on June 14, 2013 after successful contract negotiations. The City Council voted to move forward with the BAF technology, which may stay within the fence line on April 8, 2013. No further action is required of the City.

j. By August 31, 2014, the City shall complete design of secondary treatment facilities.

i) *The City held a kickoff meeting for Design Engineering Services with AECOM on June 18, 2013. The consultant's scope of work includes design of a Biological Aerated Filter (BAF) capable of meeting a total nitrogen effluent limit of 8 mg/L on a seasonal rolling average basis. Design of the treatment facilities is underway. The Design Phase 1 Summary Memorandum forwarded to EPA on May 27, 2014 outlined the initial phase of design including field work, evaluation of existing facilities, development of the upgraded site and facilities layouts, site visits at similar facilities, and establishment of design criteria. The 30% Final Design Report forwarded to EPA on July 31, 2014 included design plans, basis of design and updated cost estimates. The current estimate of project cost is \$86 million. Value Engineering was performed the first week of August by ARCADIS U.S., Inc. The value engineering workshop resulted in a number of recommendations being incorporated into the design. The plans were updated and the costs estimate was reduced to \$80 million. The City recently executed a contract with AECOM for Final Design Phase 3A to 75% design.*

The City asked AECOM to expedite the design of the existing primary clarifier (PC) and gravity thickener (GT) mechanism replacement. This portion of the work was expedited due to the age and condition of this mechanical equipment as determined during the Phase 1 Design. These mechanisms have been operating since the early 1990's and have exceeded their intended design life and are in poor mechanical condition. In order to avoid a mechanical failure in the midst of the full treatment plant upgrade, the City chose to expedite the work. Bids for the PC and GT Replacement portion of the project were received on July 24, 2014.

There are no construction activities with this item.

- ii) The City's consultant is designing a WWTF upgrade capable of nitrogen removal. As noted in previous quarterly reports and separate correspondence, designing for nutrient removal will require substantial additional effort above that for the plant required under the Consent Decree which achieves only secondary treatment and so this Consent Decree milestone is unlikely to be met. The City has requested an extension of this milestone which is being discussed between the City and EPA in the context of the informal dispute resolution process described in the Consent Decree and in the preface to this report.*

The City's concurrent study of regional wastewater treatment options at the City's Pease WWTF location is ongoing. See the second paragraph of the Preface. In order to manage the City's resources, there may be delay in meeting this deadline in addition to the time already being discussed. See the first paragraph of the Preface.

- iii) See response to ii above. The City expedited design of the PC and GT Replacement and will continue to make efforts to expedite the schedule if possible and consistent with sound engineering practice.*
- iv) The Peirce Island WWTF NPDES permit reapplication was submitted in December, 2011. A draft NPDES permit has not yet been received. Design related permitting is underway. This work includes an archaeological assessment related to a review of the National Register of Historic Places as required per Section 106 of the National Historic Preservation Act. The final report for this work was submitted and accepted by the New Hampshire Division of Historical Resources (DHR). DHR concurred with the finding and indicated no additional studies were required by letter dated May 27, 2014. The City will soon be pursuing natural resource type permits for standard dredge and fill, shoreland protection, alteration of terrain, and local site plan review. Additional permits may be required and will be defined as the final layout is developed and finalized. Construction permits will be required and will be the responsibility of the selected Contractor.*
- v) There are no operation and maintenance activities with this item.*
- vi) There is no specific report associated with this milestone to be submitted to State Agencies. A Design Phase 1 Summary Memorandum and 30% Final Design Memorandum were forwarded under separate cover. The 60% Final Design plans and specifications will be forwarded under separate cover.*

k. By March 1, 2015, the City shall commence construction of secondary treatment facilities.

- i) The City recently received bids for the PC and GT Replacement. The project was awarded to Methuen Construction, Inc. in the amount of \$1,375,114. A notice to proceed was issued on September 12, 2014 with a substantial completion date of September 25, 2015. The City has requested an extension of this milestone related to the full treatment plant upgrade which is*

being discussed between the City and EPA in the context of the informal dispute resolution process described in the Consent Decree and the preface to this report. The construction schedule will be finalized as part of Consent Decree procedures referenced in requirement j above.

- ii) The City's consultant is designing a WWTF upgrade capable of nitrogen removal. As noted in previous quarterly reports and separate correspondence, designing for nutrient removal will require substantial additional effort beyond that for constructing a secondary only plant required by the Consent Decree and so this Consent Decree milestone is unlikely to be met to the extent that construction of the Biological Aerated Filter will not commence until after March 1, 2015. The PC and GT Replacement project has been expedited ahead of the bigger construction effort for the secondary facilities. This work would have been necessary for the secondary treatment upgrade and is being advanced due to avoid the risk of mechanical failure during the larger construction effort.*

The City's concurrent study of regional wastewater treatment options at the City's Pease WWTF location is ongoing. See the second paragraph of the Preface. In order to manage the City's resources, there may be delay in meeting this deadline in addition to the time already being discussed. See the first paragraph of the Preface.

- iii) See response to ii above. The PC and GT Replacement has been expedited in advance of the larger facility upgrade and additional efforts will be made to expedite the schedule if possible and consistent with sound engineering and construction practices.*
- iv) The Peirce Island WWTF NPDES permit reapplication was submitted in December, 2011. A draft permit has not yet been received. Applications will soon be submitted for natural resource type permits and construction related permits will be the responsibility of the selected Contractor. Any additional permits will be defined as the design is finalized. No special permits were required as part of the PC and GT Replacement project.*
- v) The PC and GT Replacement will potentially result in an anticipated bypass around one primary clarifier during replacement of the clarifier mechanisms. This may result in reduced effluent quality from the treatment system. EPA and DES were notified of this anticipated bypass by letter from AECOM dated July 25, 2014.*

There are no operation and maintenance activities with this item at this time related to the full treatment facility upgrade.

- vi) There is no report associated with this milestone to be submitted to State Agencies.*

1. By March 1, 2017, the City shall complete construction of secondary treatment facilities.

- i) The PC and GT Replacement is anticipated to be completed by September 2015. The City has requested an extension of this milestone as it relates to the larger WWTF upgrade, which is being discussed between the City and EPA in the context of the informal dispute resolution process described in the Consent Decree and the preface to this report. The construction schedule will be finalized as part of Consent Decree procedures referenced in requirement j above.*
- ii) This milestone is unlikely to be met for the larger WWTF upgrade. The completion of construction will be impacted by resolution of the issues raised in the previous Quarterly Reports, in the preface and separate correspondence. The City's concurrent study of regional wastewater treatment options at the City's Pease WWTF location is ongoing. See the second*

paragraph of the Preface. In order to manage the City's resources, there may be delay in meeting this deadline in addition to the time already being discussed. See the first paragraph of the Preface.

- iii) See response to ii above. The PC and GT Replacement has been expedited in advance of the larger facility upgrade and additional efforts will be made to expedite the schedule if possible and consistent with sound engineering and construction practices.*
- iv) The Peirce Island WWTF NPDES permit reapplication was submitted in December, 2011. A draft permit has not yet been received. Applications will soon be submitted for natural resource type permits and construction related permits will be the responsibility of the selected Contractor. Any additional permits will be defined as the design is finalized.*
- v) There are no operation and maintenance activities with this item.*
- vi) There is no report associated with this milestone to be submitted to State Agencies.*

m. By May 1, 2017, the City shall achieve compliance with secondary treatment limits in the Permit.

- i) There are no construction activities with this item yet. The construction schedule will be finalized as part of Consent Decree requirement j above.*
- ii) This milestone is unlikely to be met. The City has requested an 18 month extension of this compliance date and that request is being discussed between the City and EPA in the context of the informal dispute resolution process described in the Consent Decree and the preface to this report. The date for achieving secondary compliance will be impacted by resolution of the issues raised in previous Quarterly Reports and separate correspondence. The City's concurrent study of regional wastewater treatment options at the City's Pease WWTF location is ongoing and is not anticipated to result in additional time requested to meet this compliance milestone. There may be a need to adjust this milestone if the results of this study result in a change in the City's current path to upgrade the Peirce Island Wastewater Treatment Facility.*
- iii) See response to i) and ii) above. Efforts will be made to expedite the schedule if possible and consistent with sound engineering and construction practices.*
- iv) The Peirce Island WWTF NPDES permit reapplication was submitted in December, 2011. Applications will soon be submitted for natural resource type permits and construction related permits will be the responsibility of the selected Contractor. Any additional permits will be defined as the design is finalized.*
- v) There are no operation and maintenance activities with this item.*
- vi) There is no report associated with this milestone to be submitted to State Agencies.*

n. Whenever feasible, the City shall commence work in advance of milestones and complete such work as expeditiously as practicable, consistent with sound engineering practice and normal construction practices.

The City understands this measure and when consistent with sound engineering practice and normal construction practices will strive to meet its intent.

10. Combined Sewer Overflow Facility Upgrades. The City shall implement its April 2005 Final CSO Long Term Control Plan in accordance with the following schedule and shall complete all construction for implementation of the 2005 LTCP by October, 2012:

A revised schedule was included with the Consent Decree Modification which was filed on July 2, 2012.

Planning Area I.D.	Contract I.D.	Project Start Date	Project Completion Date
Lincoln 3	Phase I	In Progress	10/1/2011
Lincoln 3	Phase II	In Progress	10/1/2012
Lincoln 3	Phase III	In Progress	10/1/2013
Court/State	Court #3	1/1/2008	1/1/2012
Islington	Islington #1	Under Design	10/1/2010
Islington	Islington #2	Under Design	1/1/2012

*Revised LTCP Schedule **

<i>Planning Area I.D.</i>	<i>Contract I.D.</i>	<i>Project Status</i>	<i>Project Completion Date</i>
<i>Lincoln 3</i>	<i>Phase I</i>	<i>Complete</i>	<i>6/1/2012</i>
<i>Lincoln 3</i>	<i>Phase II</i>	<i>Under Construction</i>	<i>10/29/14 10/1/2014</i>
<i>Lincoln 3</i>	<i>Phase III</i>	<i>Complete</i>	<i>10/1/2013</i>
<i>Islington</i>	<i>Islington #2</i>	<i>Complete</i>	<i>7/30/13 6/1/2013</i>

* As filed July 2, 2012 Consent Decree Modification.

- i) *The construction related activities with this item are shown in the table above. The compliance measures associated with this item are on-going. Construction of the Lincoln 3 Phase II project is underway. The City notified EPA by letter dated September 16, 2014 that the completion date for this project was not going to be met. The project scheduled was impacted due to spring weather conditions (snow) and loss of pipe installation production due to unforeseen conditions. This resulted in a modification to the contractual completion date from October 1, 2014 to October 29, 2014. Construction for sewer separation for the project will be completed earlier if possible and consistent with sound engineering practice and normal construction practices.*
- ii) *Consent Decree milestones associated with this item will meet the revised schedule and earlier if possible and consistent with sound engineering practice and normal construction practices.*
- iii) *There are no problems encountered or anticipated with this item.*
- iv) *There is no permit application pending associated with this item.*
- v) *There are no operation and maintenance activities with this item.*
- vi) *There are no reports to State Agencies associated with this item.*

11. Interim Emissions/Effluent Limits. Until the City completes construction of, and achieves full operation of secondary treatment facilities in accordance with the schedule contained in this Consent Decree, the City shall comply with the interim limits and measures set forth in Appendix C. (See Current AO effluent limits). Thereafter, the City shall comply with the applicable NPDES permit limits then in effect.

- i) *The Peirce Island WWTF has met the interim permit limits for the Quarter covered by this*

report. The compliance measures associated with this item are on-going. There are no construction related activities with this item.

- ii) There are no Consent Decree milestones associated with this item.*
- iii) The wastewater BOD₅ strength coming to Peirce Island appears to increase in the soluble form during periods of low flow. This occurred in the late summer and fall of 2012 and 2013. The soluble component passes through the physical CEPT process and makes it difficult to meet permit limits. The City anticipates that this issue will be resolved by construction of the new facility.*
- iv) There is no permit application pending associated with this item.*
- v) There have been no exceptional operations and maintenance activities outside of routine wastewater treatment facility operations associated with this item.*
- vi) There are no reports to State Agencies associated with this item that have not also been submitted to the EPA as part of the milestone deadlines.*

12. Post Construction Monitoring Plan.

This item was submitted as part of the June 4, 2010 Wastewater Master Plan Draft submission. The implementation schedule will be adjusted to reflect the new schedule listed in item 10 above.

- i) The City received statements of qualifications and interviewed consultants in response to RFQ 37-14 I/I and PCMP. Based on the consultants' experience, the City chose to separate the projects. The post construction monitoring plan (PCMP) will include implementation of the post construction monitoring plan as required in the City's Consent Decree and will update the implementation schedule as identified in the introductory paragraph to this item. The project was awarded to Hazen & Sawyer and a contract executed September 15, 2014. The infiltration and inflow (I/I) project will include a sewer system evaluation survey of all portions of the collection system except the reconstructed Lincoln basin and a sump pump removal program for the City. This work will identify sources of extraneous flow in the collection system and make recommendations for system rehabilitation to reduce extraneous flow. A final scope of work is being negotiated and a contract will be awarded in November 2014.*
- ii) The Consent Decree milestones associated with this item will be met.*
- iii) The Consent Decree milestones associated with this item will be met.*
- iv) There is no permit application pending associated with this item.*
- v) There are no operation and maintenance activities associated with this item.*
- vi) There are no reports to State Agencies associated with this item.*

As required by the Consent Decree:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Please call me at 603-766-1416 if you have any questions or require additional information.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Peter H. Rice', followed by a long horizontal line extending to the right.

Peter H. Rice, P.E.
Director of Public Works

cc: Chief, Environmental Enforcement Section
✓Joy Hilton, USEPA Region 1
Tracy L. Wood, P.E., NHDES Wastewater Engineering Bureau
Allen Brooks, Esq., Department of Justice, Environmental Protection Bureau
Mr. John P. Bohenko, City Manager, City of Portsmouth
Robert P. Sullivan, City Attorney
Suzanne Woodland, Assistant City Attorney
David S. Allen, P.E., Deputy City Manager
Brian Goetz, Deputy Director of Public Works
E. Tupper Kinder, Esquire Nelson Kinder & Mosseau PC.